

[0024] FIG. 12 illustrates an embodiment of a method of sending the assessment data profile to the remote device.

[0025] FIG. 13 illustrates an embodiment of a method of sending data to produce and deliver the assessment report.

[0026] FIG. 14 illustrates an embodiment of a method of initial preparation of the local and remote devices.

[0027] FIG. 15 illustrates an embodiment of a method of the remote device producing an execution therapy report.

[0028] FIG. 16 illustrates an embodiment of a method of generating an initial recommended therapy report.

[0029] FIG. 17 illustrates an embodiment of a method of sending data to the database and the physician's device during initial patient assessment.

[0030] FIG. 18 illustrates an embodiment of a method of performing the prescribed evaluation and therapeutic use of the device.

[0031] FIG. 19 illustrates an embodiment of a method of the patient operating the local device.

[0032] FIG. 20 illustrates an embodiment of a method of synchronizing the local device and the remote device.

[0033] FIGS. 21 and 22 illustrate an embodiment of a method of data transfer during synchronization of the local device and the remote device.

[0034] FIG. 23 illustrates a method of sending data to the physician's device during or after the synchronization of the local device and the remote device.

[0035] FIG. 24 illustrates a method of sending data to the remote device and the database to update the therapy.

[0036] FIG. 25 illustrates an embodiment of a method of the remote device analyzing the treatment data.

[0037] FIG. 26 illustrates an embodiment of the aural rehabilitation system architecture.

[0038] FIG. 27 illustrates an embodiment of the aural rehabilitation system that can include (the use of) a WAN 164 or the internet.

[0039] FIG. 28 illustrates a schematic diagram of an embodiment of a local device.

[0040] FIGS. 29 and 30 illustrate various embodiments of the hardware interface.

[0041] FIG. 31 illustrates an embodiment of an adaptive threshold training system architecture and subject.

[0042] FIG. 32 illustrates an embodiment of an adaptive threshold training system architecture.

[0043] FIG. 33 illustrates a method for adaptive threshold training.

DETAILED DESCRIPTION

[0044] A system 2 for neurological rehabilitation, such as aural rehabilitation, treatment or training, can have an electronics hardware platform and/or software programs. The system 2 can perform one or more neurological exercise modules, such as aural rehabilitation or training exercise modules. (Rehabilitation, training and treatment are non-limitingly used interchangeably within this description.)

[0045] Examples of the modules are described in the poster The Word In Context Intelligibility Test (WICIT), by Cox et al. and Presented at the American Academy of Audiology National Convention, Dallas, Tex. 1995, and "The Case for LACE: Listening and Auditory Communication Enhancement Training", both of which are incorporated herein in their entireties.

[0046] Each module can be used to diagnose and/or provide treatment and/or therapy to a subject. The modules can be used as neurological training exercises. The modules can be cognitive modules, degraded speech modules, competing speech modules, context (i.e., contextual) modules, interactive communication modules, or combinations thereof. The cognitive modules can train, for example, auditory working memory and/or speed of processing. The context modules can address linguistics.

Cognitive Module

[0047] The cognitive modules, for example training auditory memory modules or working memory modules, can audibly play a series of words. The series of words can be a sentence. The subject can be asked to remember or recall an answer word in the series before a target word in the series. The subject can be asked to speak the answer word after the audible playing of the series.

[0048] The working memory module can be made more difficult, for example, by asking for multiple answer words for each series (e.g., "What comes before 'seven', 'given' and 'fortune.'), by playing multiple series (e.g., multiple sentences), by increasing the length and/or number of words in the series (e.g., longer sentences), by dividing the subject's attention, for example, with an additional memory task such as by asking the subject to answer questions regarding the substantive content of the series of words (e.g., "What did the dog do with the bone?"), or combinations thereof. The working memory module can be made less difficult, for example, by asking for less answer words for each series, by playing fewer series, by decreasing the length and/or number of words in the series (e.g., shorter sentences), or combinations thereof.

[0049] For example, the working memory module can ask the subject to say out loud the answer word that comes just before the target word. The target word in the following example can be "out." The module can then audibly play the series of words, "The concert was sold out last week." The answer word is "sold."

[0050] The subject can repeat use of the cognitive modules. The target words and series of words can vary from one use to the next use.

[0051] The difficulty of the cognitive module can vary adaptively based on performance. A working memory and/or cognitive skill score can be recorded for the subject. If the subject responds with the correct answer word, the appropriate (e.g., working memory and/or cognitive) skill scores can be increased. If the subject responds with the incorrect answer word, the appropriate skill score can be decreased. As the working memory and/or cognitive skill score increases, the cognitive module can be made more difficult. As the working memory and/or cognitive skill score increases, the cognitive module can be made less difficult.

[0052] Other working memory modules can include, for example, use of digit, word, sentence, span, visio-spatial